

## Microsoft Office Productivity

Working with changing data?  
Spot and track trends with  
moving averages

## Information Systems Protection

Beat the bots: Defend your  
network against malicious  
robotic programs

## Web Design & Development

Simplify your web design  
with cross-browser, multi-  
column CSS layouts

## MICROSOFT OFFICE PRODUCTIVITY

# Working with changing data? Spot and track trends with moving averages

Moving averages are a frequently used data analysis method, especially for finding trends over long periods. For example, you can find the 50-day trend of a stock to get a good picture of where it's been and where it's headed. A moving average helps you decide whether the stock is a good long-term investment. By focusing on the stock's big picture, moving averages smooth over the data that can mislead you when you don't look at the big picture.

## Related Courses

- Excel 2007 - Level 1 - Level 4

## Set up a sample portfolio

For simplicity, we'll keep our moving average over a shorter time span, but keep in mind that many data analysts find it most effective to track stock prices over 20, 50, or 100 days.

### To set up the sample worksheet:

1. Launch Excel and open a new workbook.
2. Enter the data, as shown in **Figure A**.
3. Apply currency number formatting to the stock prices in cells B4:C34 by selecting them and clicking the Currency Style button on the Formatting toolbar.
4. Add any other formatting you desire, such as bold font, larger font size, italics, etc.

## Install Excel's Data Analysis tools

Excel's Data Analysis tools are part of the Analysis ToolPak that comes with the application. If you haven't installed it already, you'll need to do so in order to use the Moving Averages feature.

### To install the Analysis ToolPak:

1. Choose Tools | Add-ins from the menu bar to access the Add-Ins dialog box.
2. Select the Analysis ToolPak check box in the Add-ins Available list box, as shown in **Figure B**.
3. Click OK to load the add-in and dismiss the dialog box.

**Adapt for Excel 2007:** To install the Analysis Toolpak in 2007, click the Office button and click the Excel Options button. Choose Add-Ins from the left pane. If the Analysis ToolPak displays in your list of inactive application add-ins, select Excel Add-Ins from the Manage dropdown list and click Go. Excel displays the Add-Ins dialog box, just like you'd see in earlier versions.

## Determine the moving average of your data

Now, a new menu item appears in the Tools menu. You can use this to access the Data Analysis features that install with the Analysis ToolPak.

## From the Editor

When you want to predict the future, you often look to the past. Finding trends in your data over a long period of time can help you make smart business decisions. We'll show you how to calculate moving averages in Excel.

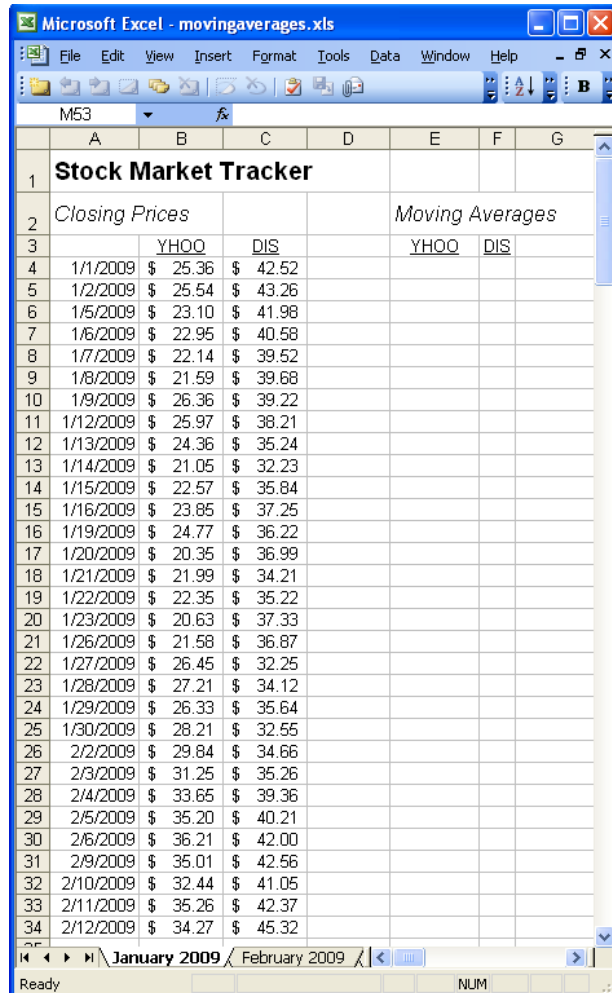
Your network comes up against several threats every day. Small bots can open up your network to remote access, putting your programs and data at risk. Find out how to beat bots today.

Finally, using cascading style sheets (CSS) to create a multi-column website isn't easy. We'll give you some tips on managing your multi-column layout with ease.

**To access the Moving Average feature:**

1. Choose Tools | Data Analysis from the menu bar to access the Data Analysis dialog box.
2. Select Moving Average from the list box and click OK.

**Adapt for Excel 2007:** In Excel 2007, you'll find the Data Analysis button in the Analysis group on the Data tab. Then, you can select Moving Average in the Data Analysis dialog box just as you would in earlier versions.



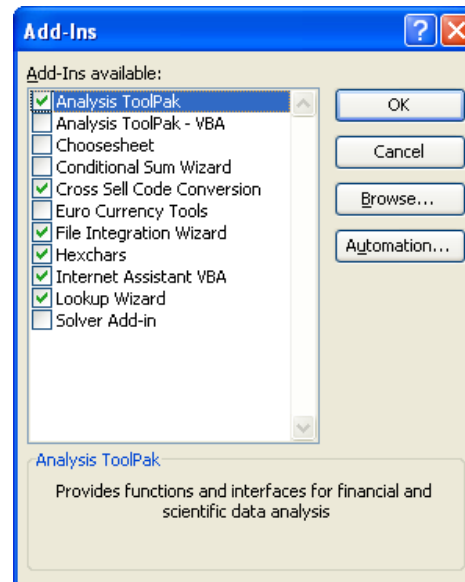
**A** We'll use the hypothetical data in this sample worksheet to demonstrate moving averages.

**To determine the moving average of your stock prices:**

1. Click in the Input panel's Input Range text box to activate it.
2. Select the cells that include your stock prices, or enter the range manually. We'll select cells B3:B34. Note: You should always use absolute references in both the input and output text boxes, which means that there are dollar signs (\$) in front of each row and column indicator.
3. If the first row of your data range contains a label, as ours does, select the Labels In First Row check box.
4. Click in the Interval text box and enter 5, since we'll be finding the five-day moving average.

5. Click in the Output Options panel's Output Range text box and select the cells in which you want to insert the moving average values. (The label in your first row won't be included in the output range.) We'll select cells E4:E34.
6. Select the Chart Output check box to create an accompanying chart for the moving average data and click OK.
7. Repeat steps 1–6 for any additional stocks for which you'd like to find moving averages.

**Note:** You can enter the cell in which you want the data to start in the Output Range text box if you aren't sure of how many rows (or columns) the range should include. Excel automatically fills the data in one row or column, depending on how the input data is structured.



**B** You must select the check box next to the add-in for it to load correctly.

**Understand the new data**

The first four days of your moving average data display as #N/A errors. This is because there isn't enough data to satisfy a five-day moving average until the fifth day of our stock price data. You should keep this in mind if you perform moving averages over longer periods. The greater the time span, the longer the lag. Also, the more data you'll need before you can begin looking at the moving averages.

So, each daily moving average value is really the average of the most recent five stock prices, including that day. For example, the moving average for the date 1/16/09 is the average of the closing stock prices for 1/12/09 through 1/16/09. You can see that this is the case by selecting cell E15 and looking at the formula bar to see which cells it includes in its formula.

**Important:** You can't calculate moving averages on more than one column or row at a time.

## Work with the moving average chart

If you selected the Chart Output check box in the Moving Averages dialog box, Excel creates a chart of the new moving averages. It doesn't look helpful at first, but with a little tweaking, it can be a powerful complement to your raw data.

**Adapt for Excel 2007:** In Excel 2007, the moving average chart is a column chart instead of a line chart. To change the chart type, go to the Chart Tools ribbon's Design tab. Click the Change Chart Type button in the Type group. Select a line chart type and click OK.

### To move and resize the chart:

1. Click and drag the chart area to move it to a more convenient location on your worksheet.

2. Select the entire chart, if it isn't already selected, and then click and drag the corner sizing handles to enlarge it while keeping its dimensions proportional.

### To eliminate the data markers:

1. Right-click on the chart area and choose Chart Type from the resulting shortcut menu. (In 2007, go to the Chart Tools ribbon's Design tab and click the Change Chart Type button in the Type group.)
2. Select the Line option in the Chart Sub-type panel of the Chart Type dialog box and click OK.

When you eliminate the data markers on your data series lines, it makes the chart look less cluttered.

## Apply moving averages to your data analysis

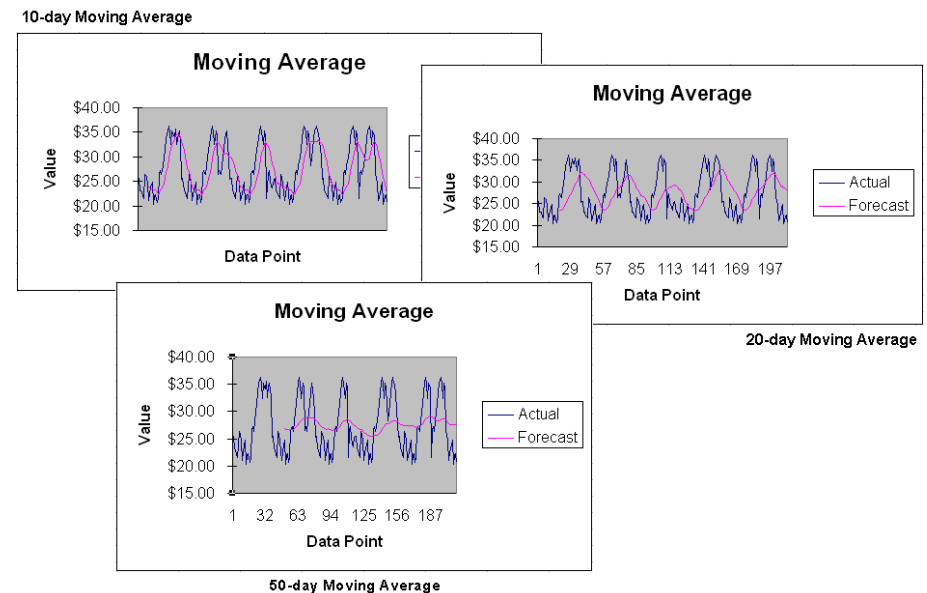
You can see from our chart that the stock's actual price has remained above its moving average trendline for several days. This is an example of how moving averages may predict more long-term results. In this case, since the trendline shows the forecasted value and the actual value has remained higher, the stock is doing better than predicted.

You can see how longer time spans affect the same data when it comes to determining moving averages. As shown in **Figure C**, the trend-

line is slightly different when the time span is stretched.

One of the reasons why moving averages are such a staple in data analysis is their ease of use. You don't need to be a stock broker to understand the

way moving averages work. And with Excel's Moving Averages feature, you can easily find the moving average for any data that changes on a regular basis, such as temperatures, sales figures, or website hits. 🌐



**C** These three charts show the 10-day, 20-day, and 50-day moving averages for the same stock.

## Business skills for the new world of work

In business today, productivity is key to your success. Whether that means setting up projects for success, forecasting and analyzing trends, or managing critical business information, it is vital that you have the skills to work at peak performance. You already know how to use Microsoft® Office System applications. New Horizons offers Microsoft Business Skills Series Courses to teach you how to use those applications to more efficiently manage, work with, and prioritize information to make better decisions. Go to [www.NewHorizons.com](http://www.NewHorizons.com) for information on courses that cover topics such as:

- 🕒 4002 Forecasting and Trend Analysis Using Microsoft Office Excel
- 🕒 4004 Managing Critical Business Information Using Microsoft Office Access 2003
- 🕒 4008 Building Better Microsoft Office Word 2003 Documents In Less Time

# Beat the bots: Defend your network against malicious robotic programs

Network administrators are seeing a new threat from cyberattackers: the use of small scripts called bots that install themselves as software agents and automate the process of opening up victims' computers to remote access. With an army of bots at his disposal, a hacker can take control of hundreds or even thousands of computers all over the world and use them for his own purposes.

Because bots are stealthier than traditional viruses and worms, they're more difficult to guard against, detect, and remove. Luckily, anti-virus vendors and security experts are recognizing the threat posed by bots and modifying their products to help protect

against them — but running a good AV program is only the first step. Your security configuration and your users' behavior on the network can go a long way toward determining whether you'll be able to beat the bad bots.

## How bots work

Bots, like most technologies, are not inherently bad. They've been around for a while and are used to monitor network activity, "patrol" chat rooms and enforce rules (by filtering content and dropping the connections of users who violate them), and perform other useful functions. Bots often communicate with each other using Internet Relay Chat (IRC).

Unfortunately, some people use the technology to create wormbots, adbots, spybots, spambots, warbots, and other malevolent variants.

## What bad bots can do

Malicious bots can do the following (and more):

- Sniff network packets to capture sensitive information such as logon

## Related Courses

- Security +, Certified Ethical Hacker

credentials or banking/credit card information.

- Collect email addresses to be used by spammers.
- Steal product license keys and other information stored on a system by surreptitiously sending files back to the person who created the bot, logging keystrokes, and other means.
- Download code; install or remove programs.
- Use remote computers as zombies (intermediaries) to launch Denial of Service (DoS) or other attacks on systems other than those on which the bot is installed, while covering the tracks of the real perpetrator.



View our Guaranteed to Run Cisco® Courses

Find the latest information on Cisco Certification

[View Schedule >](#)

**Note:** Groups of bots that are linked together are called bot nets. Groups of zombies that have been infected and subsequently lie in wait for the command to attack from their controllers are malicious bot nets.

Web bots (also called spiders or web crawlers) traverse websites and collect information. They're used legitimately to create indexes and search engine entries, but malicious web bots may scan sites for email addresses or steal copyrighted image files.

War bots operate on IRC channels and disconnect other users, flood the channel with messages, or take over and control the channel.

### What makes bots different

Bots differ from viruses, worms, and Trojans in several ways:

- Bots are often used as a distribution system for other types of malware.

- Bots are coded in a way that makes them more difficult to detect.
- Bots are intelligent agents that in many cases can emulate human user behavior.

The seeming intelligence of bots is one of their most unique — and scariest — characteristics. For example, sophisticated game bots can be used to cheat at online poker, chess, and other games by having the bot play the game in place of a human.

### How to beat the bots

You can keep bots off your network by following some common sense security practices:

- The first step in protecting your network and systems from bots is to install a good anti-virus program and keep its definitions updated. You should also keep operating system and application security patches current.

- You should configure your firewall to monitor outgoing traffic as well as incoming, and monitor web usage.
- Because bots are often installed through IRC channels and through peer-to-peer (P2P) file sharing programs, a use policy that prohibits network users from using IRC and P2P on work computers (or bringing laptops with IRC or P2P clients installed onto the corporate network) can help prevent bot infestation. You should block commonly used IRC and P2P ports at the firewall.
- You can prevent your email address from being collected by spam bots on mailing lists and websites by adding words or phrases that are obvious to humans but not to bots. For example, list your address as bobremovethisjones@atktakethisout.net. An experienced

mailing list or newsgroup user would know the real address is bobjones@att.net.

- You can prevent legitimate web bots from indexing your websites, or you can ban particular bots from your site by creating robot access policies on your web server.

For more information on web bots, spam bots, and bot nets, see the references in **Table A.**

### How to know if a bot has visited you

Unlike the robots from those science fiction thrillers, Web-bots don't leave burn holes from their laser blasts on the side of your server. These robots are actually just programs used to visit a bunch of URLs for the purpose of indexing — they're not even a physical entity, as the name implies.

So how then can you tell if you've been visited? Check your server logs for requestors that retrieve a number of documents in a short time, have an abnormal user-agent header value, or that repeatedly checks for the file /robots.txt.

**Table A:**

*Online resources for information on bots and bot nets*

Reference	URL
Web robot exclusion instructions	<a href="http://www.robotstxt.org/wc/norobots.html">www.robotstxt.org/wc/norobots.html</a>
Spambots Beware	<a href="http://www.turnstep.com/Spambot/info.html">www.turnstep.com/Spambot/info.html</a>
Tracking Botnets	<a href="http://www.honeynet.org/papers/bots">www.honeynet.org/papers/bots</a>

# Simplify your web design with cross-browser, multi-column CSS layouts

Because you can manage CSS in a separate place from your HTML content, it's often easier to maintain websites that use CSS instead of tables for generating the layout. However, sometimes complex layouts — such as ones involving multiple columns — can seem difficult to achieve in a way that works in all widely used browsers. We'll show you a super-easy, cross-browser way to create CSS-based columns.

## Related Courses

- Web Development with Cascading Style Sheets (Third Edition)

## The multi-column method

To demonstrate how to produce multi-column layouts, we'll create a web page with three vertical columns. We'll position the left and right columns absolutely and place them to either edge of the browser window. When we do so, the major browsers will automatically dock these columns so they stay attached to the sides of the browser as a user resizes his window.

### To see how this works:

1. Enter **Listing A** into a new text file with an HTML extension.
2. Open it in your browser.
3. Resize the browser window.

When you do, the columns always remain in the visible portion on the window, but they stay on their appropriate sides.

**Figure A** shows an example of this page when we shrink our browser window. This behavior provides a fluid layout that automatically adjusts to varying screen dimensions as well as browser window sizes.

## To handle the middle

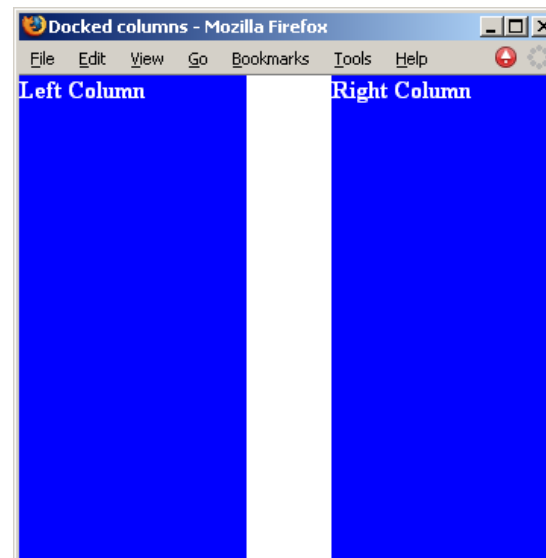
Now that we've created the side columns, we need to handle the middle. Look what happens, as shown in **Figure B**, when we add the following column of text to the layout:

```
<div id="colMiddle">
  How come I always have to sit
  in the middle seat?
  It just simply isn't fair!
</div>
```

It doesn't matter where inside the `<body>` section you place

this `<div>` element; conforming browsers flow the element and its contents behind the absolutely positioned elements.

This behavior actually conforms to the W3C CSS specifications, which state that browsers should remove



**A** Docked columns adjust to varying screen sizes and resolutions.

## Listing A:

### Docking columns to the right and left

```
<html><head>
<title>Docked columns</title>
<style type="text/css">
.column {
  position:absolute;
  top:0;
  width:150px;
  height:100%;
  background-color:blue;
  color:white;
  font-weight:bold}
#colLeft {left:0}
#colRight {right:0}
</style>
</head>
<body>
<div id="colLeft" class="column">
  Left Column</div>
<div id="colRight" class="column">
  Right Column</div>
</body></html>
```

absolutely positioned elements from the normal document flow. Of course, this doesn't help us display the middle-column content, but it's good to know the behavior is to spec!

## Adjust the margins

Overcoming this roadblock is actually quite easy. To get the middle column's content into the gap between the left and right columns, all we need to do is set the middle column's left and right margins to match the left and right columns' widths. **Listing B** shows the finalized web page with this modification; **Figure C** shows the results.

## How to create sub-columns

At this point, if you want to place some sub-columns in the middle column, it's an easy matter to float these middle sections. To add a few sub-columns to our current example, modify the `<div>` element with ID `colMiddle` so it looks like this:

```
<div id="colMiddle">
  <div class="subcol">
    How come I always have to sit
    in the middle seat?
    It just simply isn't fair!
  </div>
  <div class="subcol">
    Hey! You're not the only one.
```

```
Now we both have to fit in here!
</div>
</div>
```

Next, add the following CSS to the page's existing `<style>` block:

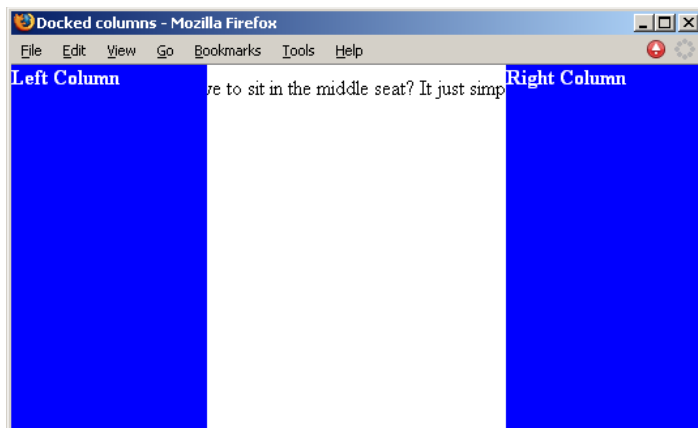
```
.subcol {float:left;width:45%;
padding-left:7px;
padding-right:3px;}
```

As long as there's enough horizontal space for the columns to fit, standards-based browsers display all four columns. Naturally, you can add any additional content before or after these subcolumns.

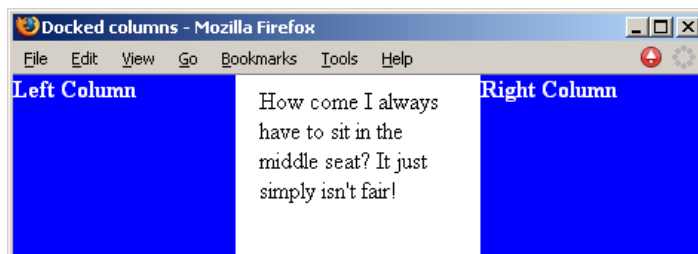
## Float your element

The `float` property tells the browser to flow the object to the left or right of the parent element as follows:

- When you float an element to the left, all other elements flow alongside to the right.
- When you float an element to the right, remaining elements and text flow alongside the left.



**B**  
*Conforming CSS browsers remove absolutely positioned elements from the normal document flow.*



**C**  
*When you adjust the middle column's margins, the content appears.*

## Listing B: Adjusting the margins

```
<html><head>
<title>Docked columns</title>
<style type="text/css">
.column {
position:absolute;
top:0;
width:150px;
height:100%;
background-color:blue;
color:white;
font-weight:bold}
#colLeft {left:0}
#colMiddle {
margin-left:150px;
margin-right:150px;
padding-left:.5em;
padding-right:.5em;}
#colRight {right:0}
</style>
</head>
<body>
<div id="colLeft" class="column">
Left Column</div>
<div id="colMiddle">
How come I always have to sit
in the middle seat?
It just simply isn't fair!
</div>
<div id="colRight" class="column">
Right Column</div>
</body></html>
```

## A few tweaks for cross-browser sub-columns

There are a few small problems with the code as it stands; if you try our final example in Microsoft Internet Explorer, it doesn't work. The sub-columns don't show up. That's because so far we haven't been using the DOCTYPE tag to force IE6 into standards mode. If you do that, you'll find another problem: Our use of the `height` property varied subtly from the CSS standard. We'll have to fix that to make our code cross-browser compatible.

First, let's add the DOCTYPE. Simply place the following code at the top of the document:

```
<!DOCTYPE HTML PUBLIC
  "-//W3C//DTD HTML 4.01 Strict//EN">
```

When you do this, the sub-columns show up in Internet Explorer, but `height:100%` doesn't seem to work anymore.

## How to get 100% height to work in strict mode

Naturally, we'd like to get the color for the left and right columns to stretch the full height of the viewport. That's why we set `height:100%`. But in strict mode, this approach doesn't work.

At first, the problem may seem like an insurmountable quirk of IE. But in fact, this behavior is according to spec, and isn't really as hard to fix as it may appear.

### Height percentage is based on the containing element

According to the CSS2 standard, section 10.5, when you use a percentage with the `height` property, the percentage is calculated with respect to the height of the generated box's containing block. If the height of the containing block isn't specified explicitly, the value is

interpreted like `auto`, meaning that it depends on content height.

In other words, to make `height:100%` work, you need to give a height to the containing block. In this case, that would be `<body>`. So, to fix the problem, we just have to specify `height:100%` for `<body>` as well. For maximum browser compatibility, we'll also specify this for `<html>`. And, to avoid any default margins in `<body>` from keeping

the height from being a full 100%, we'll specify `0px`; for the margins.

Hence, to get `height:100%` to work, just add the following additional style inside the `<style>` section of the page:

```
html, body {
  position: relative;
  margin: 0px;
  padding: 0px;
  height: 100%;
}
```

## Graphic & Design eTips to Enhance Your Work



If you are an expert at what you do, then you want to sign up for FREE New Horizons Graphics & Digital Designer eTips. Each week you will receive expert advice from our experienced editors that will improve your productivity and enhance your work. Learn more about the applications you use everyday, including: Adobe Illustrator, Adobe InDesign, Adobe Pagemaker, Adobe Photoshop, Digital Photography and QuarkXPress. Imagine the possibilities with the skills you'll gain!



*Elevate* is produced exclusively for New Horizons Computer Learning Centers, Inc.



Powered by:

#### Copyright

© 2009 Eli Journals. This work is an independently produced publication of Eli Research, the Content of which is the property of Eli Research or its affiliates or third-party licensors and which is protected by copyright law in the United States and elsewhere. The right to copy and publish the Content is reserved, even for Content made available for free such as sample articles, tips, and graphics, none of which may be copied in whole or in part or further distributed in any form or medium without the express written permission of Eli Research. Requests for permission to copy or republish any Content may be directed to Mark Lydard at (800) 508-1316.

Interested in a custom-content publication? Email us at [customcontent@elijournals.com](mailto:customcontent@elijournals.com).